

WHAT IS CLAIMED:

1. A stent for repairing a bifurcated vessel, comprising:
 - a cylindrical body having a plurality of rings aligned along a common longitudinal axis;
 - each ring having a delivery diameter and an implanted diameter and a plurality of first peaks configured to spread apart to permit the rings to expand radially outwardly or compress radially inwardly;
 - the cylindrical body having a proximal section, a distal section, and a central section;
 - the proximal section having between one and fifteen rings;
 - the distal section having between one and fifteen rings;
 - the central section having between one and ten rings;
 - the number of first peaks in the central section differing from the number of first peaks in the proximal section and the distal section; and
 - the plurality of first peaks having a proximal end and a distal end so that the proximal end of at least one first peak of the central section is connected to the distal end of at least one first peak of the proximal section by at least one link.
2. The stent of claim 1, wherein the rings of the proximal section have between four and twelve first peaks, the rings of the distal section have between four and twelve first peaks, and the rings of the central section have between five and fifteen first peaks.
3. The stent of claim 1, wherein the rings of the proximal section have seven first peaks, the rings of the distal section have six first peaks, and the rings of the central section have eight first peaks.

4. The stent of claim 1, wherein the number of first peaks in the ring(s) of the central section is greater than the number of first peaks in any of the rings in either the proximal section or the distal section.
5. The stent of claim 1, wherein the adjacent rings are connected by links.
6. The stent of claim 1, wherein the rings are connected by at least one link between adjacent rings.
7. The stent of claim 6, wherein at least some of the links have a straight segment.
8. The stent of claim 6, wherein at least some of the links have a curved segment.
9. The stent of claim 6, wherein at least some of the links have a straight segment and a curved segment.
10. The stent of claim 6, wherein at least some of the links have a non-linear segment.
11. The stent of claim 1, wherein the cylindrical body has a distal opening, a proximal opening, and a central opening.
12. The stent of claim 11, wherein the distal opening and the proximal opening are aligned along the stent longitudinal axis.

13. The stent of claim 12, wherein the central opening is radially offset relative to the alignment of the distal opening and the proximal opening.

14. The stent of claim 1, wherein each ring has at least one second peak.

15. The stent of claim 14, wherein at least some of the at least one second peaks are connected to a link.

16. The stent of claim 1, wherein the stent is formed from metal.

17. The stent of claim 16, wherein the metal is taken from the group of metals including stainless steel, titanium, nickel-titanium, cobalt-chromium, cobalt-chromium-vanadium, cobalt-chromium-tungsten, gold, silver, platinum, or platinum-iridium.

18. The stent of claim 1, wherein the at least one link has a thickness in the range from about 0.001 inch (0.025 mm) up to about 0.006 inch (0.152 mm).

19. The stent of claim 1, wherein the at least one link has a width in the range from about 0.001 inch (0.025 mm) up to about 0.006 inch (0.152 mm).

20. The stent of claim 1, wherein the at least one link has a straight segment.

21. The stent of claim 1, wherein the at least one link has a curved segment.

22. The stent of claim 1, wherein the at least one link has a straight segment and a curved segment.

23. The stent of claim 1, wherein the at least one link has a non-linear segment.

24. The stent of claim 1, wherein the number of first peaks in the ring(s) of the central section is proportional to the number of links connecting the first peaks of the central section and proximal section.

25. The stent of claim 1, wherein the central section includes one ring having eight first peaks such that the proximal end of one first peak of the central section is connected to the distal end of one first peak of the proximal section by two links.

26. The stent of claim 1, wherein the central section includes one ring having eight first peaks such that the proximal end of two first peaks of the central section is each connected to the distal end of one first peak of the proximal section and to the distal end of one second peak of the proximal section by one link.

27. The stent of claim 1, wherein the proximal end of the at least one first peak of the central section and the distal end of the at least one first peak of the proximal section are connected in an out of phase configuration.

28. The stent of claim 1, wherein the plurality of first peaks are formed of struts having a length.

29. The stent of claim 28, wherein the length of the first peaks is inversely proportional to the length of the at least one link connecting the first peaks of the central section and the proximal section.

30. The stent of claim 1, wherein the ring or rings in the central section of the stent have a corresponding set of nested peaks within the first peaks of the ring or rings of the central section.

31. The stent of claim 1, wherein the stent is coated with at least one layer of a drug.

32. The stent of claim 1, wherein the stent is coated with at least one layer of a therapeutic agent.

33. The stent of claim 1, wherein at least a portion of the stent is coated with a primer material, which adheres to the stent, the primer material being coated with at least one layer of a therapeutic agent or drug.

34. A stent for repairing a bifurcated vessel, comprising:
a cylindrical body having a plurality of rings aligned along a common longitudinal axis;

each ring having a delivery diameter and an implanted diameter and a plurality of first peaks configured to spread apart to permit the rings to expand radially outwardly or compress radially inwardly;

the cylindrical body having a proximal section, a distal section, and a central section;

the proximal section having between one and fifteen rings;

the distal section having between one and fifteen rings;

the central section having between one and ten rings;

the number of first peaks in the central section differing from the number of first peaks in the proximal section and the distal section;

the plurality of first peaks having a proximal end and a distal end so that the proximal end of at least one first peak of the central section is connected to the distal end of at least one first peak of the proximal section by at least one link;

wherein a central opening of the distal section is adjacent to the proximal end of the at least one first peak of the central section connected to the distal end of the at least one first peak of the proximal section by the at least one link.

35. The stent of claim 34, wherein the proximal end of two first peaks of the central section is each connected to the distal end of one first peak of the proximal section and to the distal end of one second peak of the proximal section by one link in an out of phase configuration.

36. The stent of claim 34, wherein at least one ring of the proximal section is connected to an adjacent ring of the proximal section in an in phase configuration.

37. The stent of claim 34, wherein at least one ring of the distal section is connected to at least one adjacent ring of the distal section in an in phase configuration.

38. The stent of claim 34, wherein at least one ring of the central section is connected to at least one adjacent ring of at least one of the proximal section and the distal section in an in phase configuration.

39. A stent for repairing a bifurcated vessel, comprising:
a cylindrical body having a plurality of rings aligned along a common longitudinal axis;
each ring having a delivery diameter and an implanted diameter and a plurality of first peaks configured to spread apart to permit the rings to expand radially outwardly or compress radially inwardly;

the cylindrical body having a proximal section, a distal section, and a central section;

the proximal section having between one and fifteen rings;

the distal section having between one and fifteen rings;

the central section having between one and ten rings;

the central section having an expanded diameter greater than the expanded diameter of the proximal section and the distal section;

the plurality of first peaks having a proximal end and a distal end so that the proximal end of at least one first peak of the central section is connected to the distal end of at least one first peak of the proximal section by at least one link.

40. A stent for repairing a bifurcated vessel, comprising:

a cylindrical body having a plurality of rings aligned along a common longitudinal axis;

each ring having a delivery diameter and an implanted diameter and a plurality of first peaks configured to spread apart to permit the rings to expand radially outwardly or compress radially inwardly;

the cylindrical body having a proximal section, a distal section, and a central section;

means for connecting the plurality of first peaks so that a proximal end of at least one first peak of the central section is connected to a distal end of at least one first peak of the proximal section.

41. The stent of claim 40, wherein the means for connecting the plurality of first peaks is at least one link.